

Chapter Three | Land Preservation and Restoration

Eureka, Utah, and remnants of its historic mining legacy set beneath the backdrop of the Tintic Mountains.

Founded in 1870, Eureka was once a

major silver, gold and lead production center. Today, high levels of lead and arsenic left behind in mine waste dumps and soils are being cleaned up through EPA's Superfund program. The middle of the photo above shows EPA's recontouring and capping work on the waste piles of the Gemini and Bullion Beck mines. EPA has collected more than 4,200 soil samples from residential and commercial properties in Eureka and cleaned up of 71 of the town's most contaminated residential yards. In addition, lower-risk yards have been systematically cleaned up from west to east across town. EPA and its partners have conducted extensive education efforts to reduce lead exposure and blood-lead levels are now decreasing among local children.



Introduction

The Environmental Protection Agency implements several federal laws that preserve and restore land. The Comprehensive Environmental Response, Compensation and Liability Act, commonly known as Superfund, provides for the cleanup of the nation's biggest and most expensive hazardous waste sites and in places where quick action is needed to deal with immediate threats to public health or the environment. The Resource Conservation and Recovery Act regulates hazardous waste storage, transportation and disposal; cleans up spills and leaks at hazardous waste and underground fuel storage facilities; and encourages energy and resource conservation through waste recycling, recovery and reduction. To protect our country against the environmental and health consequences of acts of terrorism, EPA also plays a vital role in meeting various Homeland Security laws and directives.

Making progress on high-priority cleanups

Years ago, people were far less aware of how the mismanagement of chemicals and other hazardous wastes might affect public health and the environment. On thousands of properties across the nation, the result was abandoned waste sites that poisoned land, water and natural environments. Concern over the extent of this problem led Congress to establish the Superfund program in 1980 to locate, investigate and clean up the worst sites. EPA administers the Superfund program in cooperation with states and tribal governments. Cleanups under the Superfund law are based on the "polluter pays" principle, which means that when possible, EPA pursues compensation from responsible parties so that taxpayers don't get stuck with the bill.

Since 1980, 60 sites in Region 8 have been listed on Superfund's National Priorities List, which includes those sites representing the greatest risk to human health, welfare and the environment.



Many of these have been fully cleaned up, others are approaching cleanup completion, and still more are being identified and work is just beginning. In 2004, EPA continued to make progress eliminating the risks associated with these sites.

Cleaning up soils in Northeast Denver neighborhoods

In northeast Denver, EPA is helping residential neighborhoods address the legacy of past mineral-processing activities. Once a major smelting center where gold, silver, copper, lead, zinc and other metals were extracted from ore, today the area is predominately populated with low-income residents. In the 1990s, soil samples taken at residential properties near the historic location of the Omaha and Grant smelter revealed high levels of lead and arsenic. EPA added the area, called Vasquez Boulevard/Interstate-70, to the National Priorities List as a Superfund site in 1999.

Since then, EPA has made steady progress removing arsenic and lead contaminated soils from residential properties in the VB/I-70 area. As of 2004, EPA has cleaned soils at more than 450 properties, with 300 more scheduled for 2005. EPA is also conducting additional environmental investigations at former smelter sites in the area. The cornerstone of EPA's success at the site has been outreach with local communities to develop and execute the residential cleanup plan. An EPA-funded Community Health program is also helping raise awareness about how residents can protect children from lead and arsenic hazards.

Recovering from asbestos contamination in Libby, Montana

In the small town of Libby, in the mountainous northwest corner of Montana, EPA is helping residents recover from serious and widespread asbestos contamination. From 1920 to 1990, vermiculite ore mined near Libby provided the town with its primary economic base. This vermiculite was used for a variety of products. In Libby, it was ubiquitous. Vermiculite entered houses as dust on the clothes of miners, blew from processing areas into residential yards, and was used as home insulation, construction fill and landscaping material for local projects.

In the late 1990s, in response to reports of hundreds of cases of asbestos-related death and disease including asbestosis, lung cancer and mesothelioma, EPA investigated and discovered that Libby's vermiculite deposit was commingled with a dangerous form of asbestos.

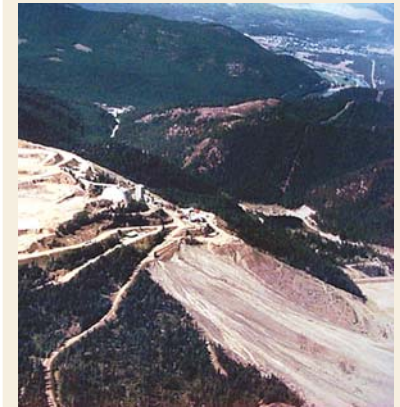
Since then, EPA and numerous federal, state and local partners have made steady advances removing asbestos contamination and addressing human health concerns. As of 2004, EPA has collected and analyzed air, dust and soil samples from more than 3,500 properties in Libby and cleaned up a total of 348 residential and commercial properties. These cleanups require intensive work that often involves sealing off houses and removing vermiculite containing asbestos from yards, attics and home interiors. EPA has also removed asbestos from two former vermiculite processing areas and from fill material under the running tracks at the local middle and high schools.

As part of the cleanup, EPA is focused on helping the community recover economically by encouraging contractors to hire local workers. During the peak 2003 field season, subcontractors had 125 full-time employees on the payroll, 88 of whom were locals. EPA estimates that more than \$15 million in cleanup money has gone directly into the Libby-area economy in the form of salaries, benefits, per diem, housing, purchases, contracts and rentals in 2003-2004.

It is estimated that EPA will spend upwards of \$200 million to complete its work in Libby. Fortunately, EPA has been successful in securing some relief from the company responsible for much of the pollution. In 2003, in the largest after-trial judgment in Superfund history, the District Court of Montana ordered W.R. Grace & Co. to pay nearly \$55 million to reimburse the federal government for past costs of investigation and cleanup.

Reaching major milestones at the Rocky Flats site

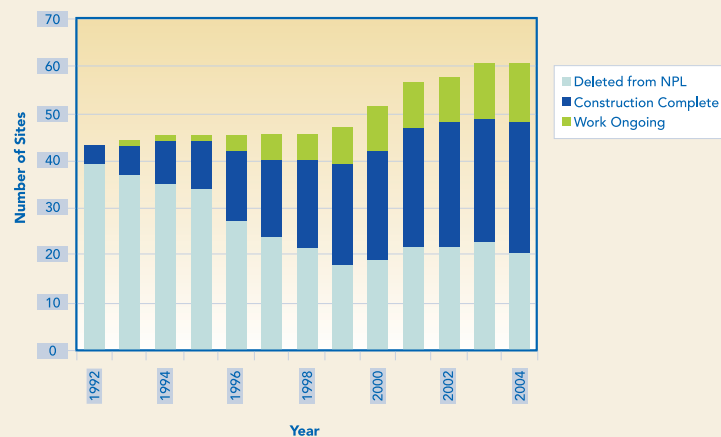
Beginning in 1952 and continuing for nearly 40 years, the government manufactured nuclear weapons components from plutonium, uranium, beryllium and stainless steel at the Rocky Flats site northwest of Denver. While contributing to the nation's defense, these activities left a legacy of serious chemical and radioactive pollution. By the late 1990s, leaking storage drums, unlined disposal trenches, surface-water impoundments, leaky pipelines and underground tanks, and two on-site landfills were some of the daunting challenges that made Rocky Flats one of the most dangerous waste sites in the nation.



Vermiculite ore contaminated with asbestos from a mine near Libby (above) is being removed from inside and outside of homes and buildings in Libby, Montana (below).



NPL Cleanup Status



Cleanup progress at Region 8 Superfund sites. "Deleted" indicates sites that have completed cleanup and have been removed from the National Priority List; "Construction Complete" sites have completed cleanup or containment; and "Work Ongoing" sites have not yet completed cleanup or containment. While Region 8 continues to identify and list new Superfund sites, progress on existing sites continues. As of the end of 2004, 12 sites have been deleted from the NPL, 27 have construction complete and 21 have work ongoing.



Photo: Gary Meinke/ CDOW

Eaglets at the Rocky Mountain Arsenal. After many years of intensive clean up, the area now supports many of its original habitants.

After decades of hard work by the Department of Energy, the Colorado Department of Public Health and Environment and EPA, Rocky Flats is on its way to shedding its radioactive past. In July of 2004, a symbolic milestone was reached as workers demolished Building 771. The building, once dubbed "the most dangerous building in America," had a 50-year legacy of plutonium leaks and spills. Another major milestone occurred in September 2004 when workers removed the last of the largest sources of soil contamination. Known as the "903 Pad and Lip Area," cleanup of the near 40-acre parcel included the removal and packaging of 97,800 tons of plutonium-contaminated soils. With these projects complete, workers have cleaned 75 percent of the buildings, soils and groundwater at Rocky Flats, which is on schedule to close by 2006.

Returning Superfund sites to productive use

EPA's Superfund program has made emphasizing the reuse of contaminated

property a priority. Cleaning up contaminated areas for reuse can help reinvigorate communities, preserve greenspace, protect natural systems and prevent sprawl.

Transforming a chemical weapons facility into a wildlife refuge

The Rocky Mountain Arsenal, located ten miles northeast of downtown Denver, has seen its share of pollution. Once a major U.S. Army chemical weapons facility, the Arsenal was leased to Shell Oil for herbicide and pesticide production beginning in the 1950s. Collectively, these operations led to serious soil and groundwater contamination. Contaminants of concern included substances resulting from the past production of nerve agents, as well as aldrin, dieldrin, dibromochloropropane and arsenic.

The Army and Shell have been working with EPA to clean up this damage since 1987. Today, water treatment systems installed on-site treat 2.4 million gallons of contaminated groundwater each day. As a result of progress, EPA deleted 5,000 acres of the Arsenal site from the Superfund National Priorities List in January 2004, an event that cleared the way for the U.S. Army to transfer the land to the U.S. Fish and Wildlife Service for use as a National Wildlife Refuge. To date, EPA has deleted nearly 6,000 of the 17,000 acres of the Arsenal from the NPL, the last step in the

Superfund process to remove areas from the program that no longer pose a significant threat to human health or the environment. Cleanup of the remaining area is projected to be complete by 2011.

The Arsenal has emerged as a national model for restoring polluted property to productive use. Tracts of land that were once severely contaminated are now home to more than 300 different species of mammals, birds, amphibians, reptiles and fish, and even more varieties of native grasses, wildflowers and other plants.

In addition to the refuge, major revitalization progress is occurring at the Arsenal. In June 2004 Commerce City purchased 917 acres of formerly contaminated land for \$4.7 million and announced plans to develop a "Prairie Gateway" complex, a \$131 million development that includes new municipal offices and retail development including a hotel, stores, restaurants and commercial office space. The City and Kroenke Sports Enterprises are also involved in a joint venture to build a 20,000-seat soccer stadium as the new home for the Colorado Rapids. The group plans to build two soccer practice fields, up to 20 youth fields and 600,000 square feet of new retail and commercial space.

From healing land to healing people at the Murray Smelter site

The Murray Smelter is another example of a Superfund site where posting "Keep Out" signs just wouldn't suffice. The 142-acre site was used for lead smelting and arsenic refining operations from 1872 to 1949; activities that polluted the soil, ground water and surface water at the site and the surrounding area.

Today, thanks to the vision of the Utah Department of Environmental Quality, Murray City, Asarco, EPA and local property and business owners, the former Murray Smelter site is being transformed from an underutilized industrial property into a hospital and retail complex. The majority of the site was purchased by Intermountain Health Care, which has already begun construction of a world-class, \$362 million hospital campus scheduled to open in 2007. Part of the property is also being redeveloped for retail use, including a Costco store that is open for business. To accommodate increased use, the site now features a Utah Transit Authority light rail station with a 300-space parking lot. The economic impact of this revitalization is expected to boost property values throughout the community and lead to a wave of new, complementary office and commercial development.

Addressing solid and hazardous waste issues

Hazardous waste comes in many shapes and forms. Landfills, gas stations, petroleum facilities, refineries, chemical production, metal finishing, furniture manufacturing and mining are all examples of activities that create hazardous waste. To prevent pollution and make sure that operating facilities treat, store, manage and dispose of hazardous waste safely, Congress passed the Resource, Conservation and Recovery Act in 1976. RCRA regulates all hazardous waste from "cradle-to-grave" and requires corrective action at operating sites where contamination is a concern. RCRA also regulates and provides resources for managing municipal garbage and industrial waste.

Managing solid and hazardous waste in Indian Country

Open dumps, orphaned waste sites, and leaking chemical and gas tanks are common threats to human health and the natural environment, particularly in Indian Country. With the help of other federal agencies, EPA's RCRA program is working

with tribes to reduce environmental risks at these sites and return land to productive use.

On the Uintah and Ouray Indian Reservations in Utah, for example, EPA and tribal partners recently removed 37,000 cubic yards of hazardous waste. The waste, mostly drilling fluids from oil exploration and production activities, had been stored in decaying tanks at the former Chapoose and Navanick oil facilities. Potential releases from these tanks could have seriously threatened surface and groundwater.

Managing garbage is also a basic need for many tribes, where unsanitary and hazardous open dumps are common. EPA provides resources to help tribes meet waste-management needs. Region 8, for example, recently helped the Spirit Lake Nation in North Dakota purchase a fleet of new garbage collection trucks to haul waste to the sanitary landfill. These trucks will greatly facilitate the collection and recovery of solid waste and minimize unsanitary dumping.

Finding solutions to complex contamination problems

EPA's RCRA program also provides technology and expertise to address serious hazardous waste issues. In Casper, Wyoming, the former ChevronTexaco refinery site has been recognized as a national success due to innovative site stabilization, cleanup and partnership work.

The refinery, which contaminated local soils and groundwater with petroleum and petroleum by-products, has been closed and state-of-the-art technology is being used to clean up the area. Cleanup included removing 200 miles of subsurface piping, thousands of tons of concrete and more than 100,000 cubic yards of petroleum-contaminated soils and source materials.

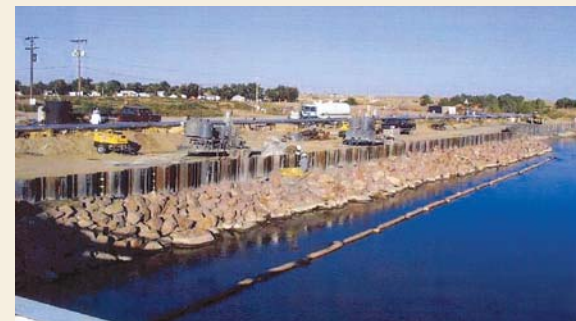
Extensive steps have also been taken to address significant groundwater and soil pollution. Microwaves have been used to enhance the recovery of hydrocarbon pollutants in the subsurface, an



Once a major Superfund site, the Murray Smelter area will soon be home to the new Intermountain Health Care hospital and a retail business district.



These decaying tanks, filled with hazardous waste from oil production activities, illustrate the often basic environmental problems that tribes face today.

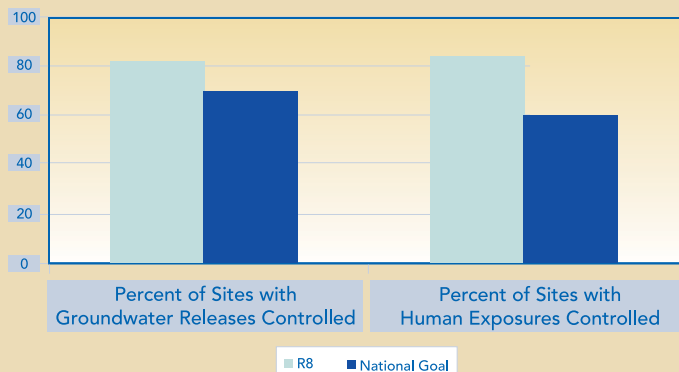


EPA helps identify and fund innovative pollution-control technologies at hazardous waste sites, such as this 6,000-foot-long subsurface barrier wall along the North Platte River in Wyoming. This wall keeps contaminated groundwater from entering the river.

RESULTS IN FOCUS

Region 8 Corrective Action Program

Surpassing RCRA Corrective Action Goals in 2004



EPA's RCRA Corrective Action program eliminates environmental risks at places where the mismanagement of hazardous waste has led to serious contamination. In Region 8, EPA is working with state programs to address 55 high-priority sites. Progress toward final cleanup is measured with two indicators: "groundwater releases controlled" and "human exposures controlled."

Achieving these indicators means that steps to eliminate and control pollution — such as cleaning up soils, treating contaminated water, installing fences and barriers, and monitoring soils and water — have been taken to ensure that pollution does not threaten people and is no longer migrating in groundwater.

During 2004, Region 8 achieved "human exposures controlled" status at three sites and "groundwater releases controlled" at three more, bringing the cumulative total to human exposures controlled at 84 percent of sites and groundwater releases controlled at 82 percent. These surpass the national 2004 targets of 80 percent and 60 percent, respectively. The Region has already met the 2005 national goal for groundwater releases, and is well on its way to the goal for human exposures controlled.

approach that has only been used at a few small sites around the country. In addition, a state-of-the-art subsurface barrier wall was installed to prevent the migration of contaminants to the North Platte River.

Responding to emergencies

Protecting human health and the environment requires the ability to respond quickly to chemical and oil spills, extreme weather and other emergencies. Since 1990, EPA on-scene responders in Region 8 have executed more than 600 time-critical responses to these types of incidents, including 34 in 2004. These responses require extensive coordination and rapid action to minimize potential impacts on surface waters, drinking water and plants and animals. A new, state-of-the-art Regional Response Center in EPA's Denver office has been instrumental in shortening response times and in improving coordination with other response agencies.

The remnants of past mining activities pose a special set of emergency response problems in Region 8. In mountainous areas, abandoned, metal and chemical-contaminated waste piles, debris and soils can create serious environmental hazards.

Approximately 25 percent of the Region's time-critical removals in 2004 were the result of abandoned mines or smelters. One incident in July occurred when heavy rainstorms in the Clear Creek watershed west of Denver severely undercut the base of tailings piles laden with toxic metals including lead, cadmium and copper. EPA executed an immediate response and stabilized the tailings, preventing a large amount of pollutants from entering the river. Since the emergency, EPA has been working with other agencies to permanently divert runoff water around the tailings piles at the site.



In November 2004, EPA responded to the release of 5,000 gallons of diesel fuel from an overturned tanker truck on Loveland Pass in Colorado. Within hours of the accident, the Colorado Highway Patrol's Hazmat Team was removing the tanker and an EPA on-scene coordinator was directing emergency cleanup of the spilled fuel. Following the emergency response, EPA ordered CHS Trucking of Inver Grove Heights, Minnesota, to build catchment ponds to prevent any remaining fuel oil from reaching the north fork of the Snake River. The order also required that the company drill four ground-water monitoring wells to determine if the fuel seeped into ground water.

Old pipelines and underground storage tanks are also common sources of incidents. During 2004, nearly half of Region 8's emergency oil responses were related to leaking pipelines or underground storage tanks. On July 19, 2004, EPA received a report that an oil release from the Woods Cross Oil Site near Salt Lake City had occurred in a storm ditch that fed into the Jordan River. EPA immediately responded and assisted in containing the release before it reached the river. Because of this response, nearly 7,000 gallons of crude oil were safely drained from an abandoned pipeline and more than 25 cubic yards of grout were pumped into the line — plugging 2,100 linear feet.

Homeland Security

Homeland Security continues to be an EPA priority. On a national scale, the Agency is developing an integrated national response program to help responders and contractors effectively react to large scale, multiple terror events or natural disasters. In Region 8, EPA is improving response capabilities through training, exercises and equipment purchases; the addition of a new Regional Response Center and mobile command post; and ongoing communication and coordination with federal, state and local agencies. EPA has also developed a Response Support Corps, which consists of more than 100 Region 8 employees who volunteer to serve in a wide variety of support functions in the event that our response system becomes overloaded by large-scale events.

When it comes to Homeland Security, the ability to respond quickly and coordinate with partners is essential. In 2004, Region 8 participated in various exercises designed to improve response capabilities. In May, Region 8 staff participated in an exercise in Colorado Springs that simulated the release of radiation from a dirty bomb. This exercise tested EPA's field response and Regional Response Center capabilities and was the first time our mobile command post was deployed. In June, EPA Regions 8, 9 and 10 tested our regional backup system to see how we would respond and coordinate in the event of a "weapons of mass destruction" attack on a drinking water system. EPA Region 8 also sent staff to assist FEMA with efforts to help Floridians recover from Hurricane Frances.



PEOPLE IN ACTION

Successfully revitalizing polluted properties often depends on people with the vision and will to take risks and make something happen. Ben Magelsen, president of Createrra, Inc. is just one of the many individuals who have come together in Midvale, Utah, to turn a polluted area into an asset. Magelsen is the master developer of Jordan Village, a 264-acre mixed-use, walkable community, located on the former Sharon Steel Superfund site — a former smelting and metal refining site once polluted with heavy metals.

Today, the site is benefiting from Magelsen's vision of a simple living environment for Utahns seeking balance in often hectic and demanding lifestyles. "My vision was to get back to basics to create a community that brings together the best of old and new, the worker and the neighbor, the pedestrian and the automobile, the recreationalist and the birdwatcher," says Magelsen.

Eventually, Jordan Village will be home to several marquee food establishments, restaurants, grocery stores, small retail shops, offices, entertainment and recreational centers, a church and a school. The area will integrate these uses in a design reminiscent of traditional town communities. More than 2,000 residential units will be built on the site from 2005 to 2012.

Like most walkable communities, Jordan Village's design has an elegant simplicity — higher density near the center, with less dense residential units radiating out from the core. Offices, small retail, restaurants and other commercial properties will be located along this corridor, intermixed with garden apartments, row houses and some condominiums. According to JoAnn Seghinni, Mayor of Midvale City, the Village offers an antidote to the sprawl that is becoming common in Utah's growing suburbs. "Jordan Village represents an opportunity to show other Utah towns and cities that you can have quality-of-life communities that are commercially viable," she says.

EPA's Rebecca Thomas, project manager at the site, sees the Village as an example of EPA's evolving ability to help communities restore land and water resources. "EPA selected Jordan Village as one of only 10 projects nationwide for our 'Return to Use Initiative' because it represents how Superfund sites can once again become centers of commerce and community vitality," says Rebecca. Return to Use is a new EPA initiative designed to promote the reuse of former Superfund sites.



The Jordan Village. Residences within walking distance of a grocery store and coffee shop, and a bike trail system are key features of the development.